APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,134	11/13/2001	Prathima Agrawal	APP 1400-US	6458

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EXAMINER
PHU, PHUONG M

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)	
Office Action Summary	10/054,134	AGRAWAL ET AL.	
	Examiner	Art Unit	
	Phuong Phu	2631	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
      closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
          application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.　　　Claims 2, 6, 7, 12, 13, 16 and 23 are objected to because of the following informalities:

Claims 2 recites the limitation "said transmission effecting means". This limitation is

lack of antecedent basis. In order to overcome this objection, the limitation "means" in claim 1

(which claim 2 depends on) is suggested to be changed to -- transmission effecting means--.

Similarly, the limitations "the detecting means" in claim 6, "the predicting means" in

claim 7, "the modulating means" in claim 12, "the predicting means" in claim 13, "the altering

means" in claim 16 and "the altering means" in claim 23 are lack of antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2.　　　The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.　　　Claims 1-6 and 17-24 are rejected under 35 U.S.C. 102(e) as being anticipated by

Mansfield (6,859,450).

-Regarding to claim 1, see figures 1, 6-9, and col. 3, line 6 to col. 4, line 16, and col. 5,

line 7 to col. 7, line 14, Mansfield discloses a terminal (see figure 1) comprising:

at least two radio interfaces (TRANSCEIVER 1, .., TRANSCEIVER N) through which

data may be transmitted; and

transmission effecting means (12) coupled to the respective radio interfaces for individually effecting collision free transmission of the data in successive time slots.

-Regarding to claim 2, Mansfield discloses that said transmission effecting means comprises means (inherently included in or added to (12)) for generating separate channel hopping patterns for TRANSCEIVER 1, .., TRANSCEIVER N that exhibit mutually exclusive frequency hops in successive time slots (CURRENT SLOT, NEXT SLOT) (see figure 7).

-Regarding to claim 3, Mansfield discloses that the time slots of the respective channel hopping patterns are synchronized (see figure 7).

-Regarding to claim 4, Mansfield discloses that the transmission effecting means comprises means (inherently included in or added to (12)) for extracting corresponding segments of the respective channel hopping patterns that occur over a selectable number of successive future time slots (e.g. two time slots) (see figure 8).

-Regarding to claim 5, Mansfield discloses that the transmission effecting means further comprises means (inherently included or added to (12)) for detecting, within the selectable number of future time slots (e.g., two time slots) , a first future time slot in which the frequency hops of the corresponding segments coincide (e.g., a future time slot with frequency hop (22) of TRANSCEIVER 2 which coincides with a future time slot with frequency hop (22) of TRANSCEIVER 3 (see figure 8)).

-Regarding to claim 6, Mansfield discloses that the transmission effecting means further comprises means (inherently included or added to (12)) coupled to the detecting means for altering the frequency hop(s) normally exhibited by a subset of the channel hopping patterns

during the first future time slot (e.g., altering by muting frequency hop (22) of the channel

hopping patterns of TRANSCEIVER 2 (see figure 9)).

-Regarding to claim 17, see figures 1, 6-9, and col. 3, line 6 to col. 4, line 16, and col. 5,

line 7 to col. 7, line 14, as with similar explanations to claims 1-6, Mansfield discloses a method

(see figure 1) comprising:

extracting step (12) of extracting corresponding segments of channel hopping patterns

that occur over a selectable number of successive future time slots;

comparing step (12) of comparing the corresponding extracted segments to detect, within

the selectable number of future time slots, a first future time slot(s) in which the frequency hops

of the respective corresponding segments coincide; and

altering step (12) of altering the frequency hop(s) normally exhibited by a subset of the

channelhopping patterns during the first future time slot(s).

-Regarding to claim 18, Mansfield discloses that the altering step comprises

muting the transmission of the subset of channel hopping patterns over the first future time

slot(s) (e.g., muting frequency hop (22) of the channel hopping patterns of TRANSCEIVER 2

(see figure 9)).

-Regarding to claim 19, Mansfield discloses that the channel hopping patterns on

the respective paths each exhibit a packet size equal to a selectable number of time slots (e.g.

two time slots (see figure 8)), and in which the altering step comprises changing the packet size

on the subset of the channel hopping patterns (e.g., changing by muting frequency hop (22) of

the channel hopping patterns of TRANSCEIVER 2 (see figure 9)).

-Regarding to claim 20, see figures 1, 6-9, and col. 3, line 6 to col. 4, line 16, and col. 5,

line 7 to col. 7, line 14, as with similar explanations to claims 1-6, Mansfield discloses a method

(see figure 1) comprising:

extracting step (12) of extracting corresponding segments of the respective channel

hopping patterns that occur over a selectable number of successive future time slots (e.g., two

time slots);

comparing step (12) of comparing the corresponding extracted segments to detect, within

the selectable number of future time slots, a first future time slot(s) in which the frequency

hops of the corresponding segments coincide (see figure 8); and

changing step (12) of changing the size(s) of the packets on a subset of the paths (e.g.,

changing by muting frequency hop (22) of the channel hopping patterns of TRANSCEIVER 2

(see figure 9)) .

-Regarding to claim 21, Mansfield discloses that the packet size changing step is

implemented prior to the occurrence of the first future time slot(s) (see figure 9).

-Regarding to claim 22, see figures 1, 6-9, and col. 3, line 6 to col. 4, line 16, and col. 5,

line 7 to col. 7, line 14, as with similar explanations to claims 1-6, Mansfield discloses a

terminal (see figure 1) comprising:

a core (10);

at least a pair of radio interfaces (included in TRANSCEIVER 1,.., TRANSCEIVER N)

associated with the core for independently supporting Bluetooth radio modules

-(TRANSCEIVER 1,.., TRANSCEIVER N);

an controller (12) coupled to the respective interfaces for effecting packet transmission

from the associated radio modules in independent channel hopping patterns in which the

packets exhibit quasi-random frequencies In successive time slots;

means (inherently included or added to (12)) for replicating corresponding segments of

the respective channel hopping patterns that occur over a selectable number of successive future

time slots (see figures 6 and 8);

means (inherently included or added to (12)) for detecting, within the selectable number

of future time slots, a first future time slot(s) in which the frequency hops of the corresponding

segments coincide (see figures 6 and 8); and

means (inherently included or added to (12)) for altering the channel hopping pattern(s)

from a subset of the radio modules over the first future time slot(s) (see figures 7 and 9).

-Regarding to claim 23, Mansfield discloses that the altering means comprises

means for muting transmission of packets from the subset of radio modules over

the first future time slot(s) (see figures 7 and 9).

-Regarding to claim 24, Mansfield discloses that the channel hopping patterns exhibit a

packet size equal to a selectable number of time slots (e.g.. two time slots (see figure 8), and in

which the terminal further comprises means (inherently included in or added to means (12) for

changing the size of the packets transmitted by the subset of radio modules (see figure 9).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mansfield.

-Regarding to claim 7, see figures 1, 6-9, and col. 3, line 6 to col. 4, line 16, and col. 5, line 7 to col. 7, line 14, as with similar explanations to claims 1-6, Mansfield discloses a terminal (see figure 1) comprising:

a core (10);

a plurality of radio interfaces (inherently included in TRANSCEIVER 1,..., TRANSCEIVER N) associated with the core for individually supporting radio modules (TRANSCEIVER 1,..., TRANSCEIVER N) adapted to transmit frequencies within a band defined by Bluetooth protocols;

predicting means (inherently included or added to (12)) for predicting a first future time slot when the frequency hops of the respective channel hopping patterns will coincide (see figures 6 and 8); and

altering means (inherently included or added to (12)) for altering the frequency hop(s) exhibited by a subset of the channel hopping patterns during the first future time slot (see figures 7 and 9).

Mansfield does not teach means for modulating the frequencies transmitted by the respective radio modules with separate channel hopping patterns exhibiting frequency hops in successive time slots;

Using a modulator in a Bluetooth transceiver for modulating the frequencies transmitted by Bluetooth transceiver with a separate channel hopping pattern exhibiting frequency hops in

successive time slots is well-known in the art for generating the output signal to be transmitted by said Bluetooth transceiver, and the examiner takes Official Notice;

Since Mansfield does not disclose in detail how each of the TRANSCEIVER 1,..., TRANSCEIVER N is implemented, it would have been obvious for one skilled in the art, when building or carrying out Mansfield invention, to implement Mansfield with a modulating means (considered here equivalent with "means for modulating") in such a way that the modulating means comprises modulators, each of the modulators modulating the frequencies transmitted by a respective radio module of the radio modules with separate channel hopping patterns exhibiting frequency hops in successive time slots in order to provide output signals to be transmitted by the respective modules as required and specified by Mansfield terminal.

-Regarding to claim 8, Mansfield discloses that the predicting means comprises means (inherently included or added to (12)) for extracting corresponding segments of the respective channel hopping patterns that occur over a selectable number of successive future time slots (see figures 6 and 8).

-Regarding to claim 9, Mansfield discloses that means (inherently included or added to (12)) for detecting, within the selectable number of future time slots, a first future time slot in which the frequency hops of the corresponding extracted segments coincide (see figures 7 and 9).

-Regarding to claim 10, as applied to claim 7, in Mansfield, the altering means comprises means (inherently included or added to (12)) for applying the output of the detecting means to the modulating means.

6.   Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mansfield in view of Lewis (6,393,261).

-Regarding to claim 11, see figures 1, 6-9, and col. 3, line 6 to col. 4, line 16, and col. 5, line 7 to col. 7, line 14, as with similar explanations to claims 1-6, Mansfield discloses a Bluetooth terminal (see figure 1) comprising:

a core (10); and

a second interface (inherently included in TRANSCEIVER 1, ..., TRANCEIVER N) associated with the core for individually supporting radio modules (TRANSCEIVER 1, ..., TRANCEIVER N) adapted to transmit frequencies within a band defined by Bluetooth protocols.

Mansfield does not disclose means for modulating the frequencies transmitted by the respective radio modules with separate Bluetooth channel hopping patterns exhibiting frequency hops in successive time slots.

Using a modulator in a Bluetooth transceiver for modulating the frequencies transmitted by Bluetooth transceiver with a separate channel hopping pattern exhibiting frequency hops in successive time slots is well-known in the art for generating the output signal to be transmitted by said Bluetooth transceiver, and the examiner takes Official Notice;

Since Mansfield does not disclose in detail how each of the TRANSCEIVER 1,..., TRANSCEIVER N is implemented, it would have been obvious for one skilled in the art, when building or carrying out Mansfield invention, to implement Mansfield with a modulating means (considered here equivalent with "means for modulating") in such a way that the modulating means comprises modulators, each of the modulators modulating the frequencies transmitted

by a respective radio module of the radio modules with separate channel hopping patterns

exhibiting frequency hops in successive time slots in order to provide output signals to be

transmitted by the respective modules as required and specified by Mansfield terminal;

Mansfield does not teach a backbone network in communications with the terminal.

Lewis discloses a backbone network in communications with the terminal (17) in

communications with a terminal (19) for providing input data to or receiving output data from

the terminal (see figure 1 and 2 and col. 3, line 46 to col. 5, line 62).

Since Mansfield does not disclose in detail how the terminal is receive data to be further

processed and transmitted by said terminal, it would have been obvious for one skilled in the art

to implement Mansfield with a backbone network in communications with the terminal for

providing input data to the terminal to be to be further processed and transmitted by said

terminal, as required by Mansfield invention.

With such an implementation, Mansfield in view of Lewis teaches a first interface (32)

associated with the core for supporting communication the terminal with the backbone network

for receiving the input data for the terminal (see Lewis, figure 2).

-Regarding to claim 12, Mansfield discloses means (inherently included or added to

(12)) coupled to the modulating means for predicting a first future time slot when the frequency

hops of the respective channel hopping patterns will coincide (see figures 6 and 8).

-Regarding to claim 13, Mansfield discloses means (inherently included or added to (12))

coupled to the predicting means for altering the frequency hop(s) exhibited by a subset of the

channel hopping patterns during the first future time slot (see figures 7 and 9).

-Regarding to claim 14, Mansfield discloses means (inherently included or added to (12)) for extracting corresponding segments of the respective channel hopping patterns that occur over a selectable number of successive future time slots (see figures 6 and 8).

-Regarding to claim 15, Mansfield discloses means (inherently included or added to (12)) for detecting, within the selectable number of future time slots, a first future time slot in which the frequency hops of the corresponding extracting segments coincide (see figures 6 and 8).

-Regarding to claim 16, as applied to claim 11, in Mansfield, means (inherently included or added to (12)) for applying the output of the detecting means to the modulating means (by receiving the output of the detecting means, processing it and correspondingly provide the altered frequency hop pattern to the modulating means).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (6:30-2:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phuong Phu
Primary Examiner
Art Unit 2631

Phuong Phu

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PRIMARY EXAMINER

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08/02/05